Columbus Water Main Replacement Project
Business Case

Green Reserve Project Type

The Columbus Water Main Replacement Project is being funded through the Drinking Water State Revolving Fund Loan Program. The city's water system provides chlorinated water from three wells to 1900 water users.

The following narrative is based on documents in the project files and information provided by the town's engineering consultant.

Documents submitted and reviewed by the State:

1. Uniform Application for Montana Public Facility Projects, dated August 1, 2011.
2. Documentation of Categorical Exclusion, prepared by Gary J. Wiens, P.E., dated January 4, 2012.
3. Plans and specifications for the Carr Avenue Water System Improvements, prepared by Interstate Engineering.
4. Plans and specifications for the 3rd Avenue Water System Improvements, prepared by Interstate Engineering.
5. Plans and specifications for the 10-inch Water Main Extension, prepared by Interstate Engineering.

List of eligible Green Project Reserve components:

1. Water main replacement
2. Total project cost = $1,000,000
3. Total DWSRF Loan/Grant Request = $1,000,000
4. Total project cost eligible for Green Project Reserve = $1,000,000

Green Reserve Project – Categorical Project:

The water main replacement portion of this project is not considered categorically green as defined by the USEPA guidance documents.

Green Reserve Project – Business Case Evaluation:

As stated in the USEPA March 2, 2009, memorandum, for traditional projects that are not categorically green, for the project, or components of the project, to be counted towards the 20% requirement, the state project files must contain documentation that a clear business case for the project (or portion) investment includes achievement of identifiable and substantial benefits that qualify as green project benefits.

The project consists of the replacement of existing cast iron and asbestos cement water mains with new PVC pipe. The existing water mains have outlived their useful life and have a history of major breaks and leaks. The project involves the installation of approximately 8130 lineal feet of PVC water main, along with valves, fittings, fire hydrants, replacement service lines and other appurtenances. The project locations are:

1. 3rd Avenue, 590 lineal feet of water main beginning at the intersection of 8th Street (Allen) and extending east along 3rd Avenue North to the alley between 9th Street and 10th Street.
2. Carr Avenue, 1345 lineal feet of water main beginning at the intersection of

Quarry Road and extending east along Carr Avenue to 3rd Street.

3. 10-inch water main, 1415 lineal feet beginning at the existing water main stub at the northwest corner of Granite Peak Park and extending east along the north and east edges to the stub located to the west of Highway 78, in line with 8th Avenue.
4. 2nd Avenue North, from the intersection of "C" Street east approximately 2100 lineal feet to the intersection of 3rd Street.
5. 1st Avenue North, from the intersection of 10th Street east approximately 790 lineal feet to the intersection of 12th Street.
6. 12th Street, from the intersection of 1st Street north approximately 740 lineal feet to the intersection of 3rd Avenue North.
7. 3rd Avenue South, from the entrance to the golf course east approximately 1150 lineal feet to the corner of the road, where an existing stub is located.

Green Project Reserve Type:

Water efficiency.

Technical Component Evaluation:

Over a 24-month period the estimated water losses from water main breaks in the project area was at least 300,000 gallons. This project will replace the existing mains with new PVC pipe. Leak volumes are estimated based on data collected by the town's Public Works Department. The project will result in annual water savings of 150,000 to 200,000 gallons.

Financial Component Evaluation:

For the same 24-month period the estimated costs to repair the main breaks was $58,400. Lost revenue attributed to the main breaks was $951. Total estimated savings for the project are estimated at $59,351 biannually. Spread over the estimated thirty-year useful life of the main replacement, this extends to $890,265 in savings, or 89 percent of the $1,000,000 estimated cost of the project.

Green Reserve Project – Evaluation Conclusion:

It is the state's determination that the business case submittal has identified clear and substantial technical and financial benefits in accordance with USEPA guidance. All of the $1,000,000 of DWSRF funding constitutes the green portion of the project, either as categorically green or as described herein. The state contact is Gary J. Wiens, P.E., Drinking Water State Revolving Fund Loan Program, Montana Department of Environmental Quality, 406-444-7838, gwiens@mt.gov